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GENERAL FISHERIES COUNCIL FOR THE MEDITERRANEAN

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GENERAL FISHERIES COUNCIL FOR THE MEDITERRANEAN

Report of the Fourteenth Session

Nantes, France, 16-20 October 1978

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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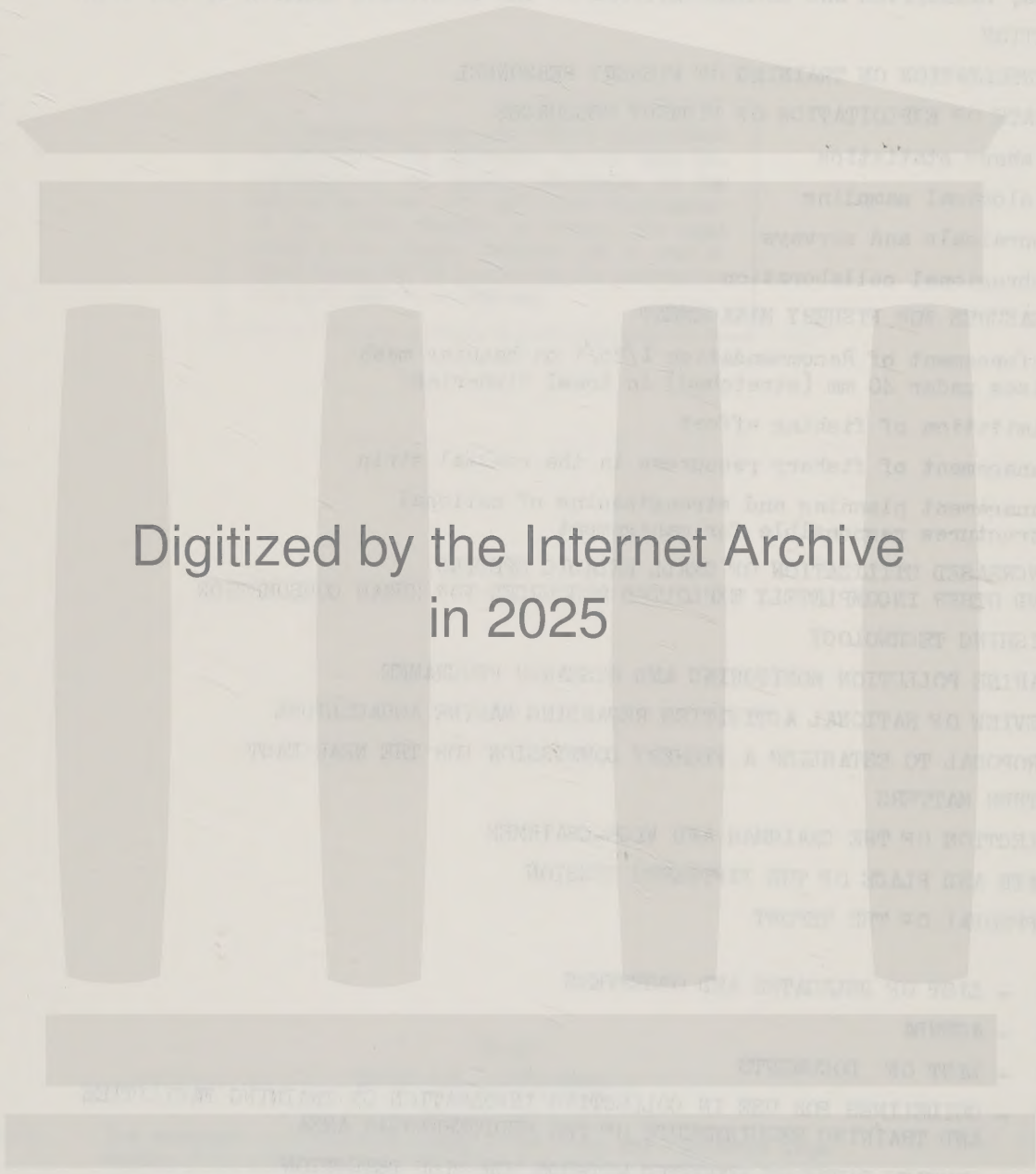

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DECISIONS, DIRECTIVES AND RECOMMENDATIONS OF THE FOURTEENTH SESSION OF THE GFCM

Training of fishery personnel

- Preparation, publication and distribution of a Directory of Training Facilities and Needs for the Mediterranean Area (Resolution GFCM/XIV/78/1, paragraph 26, and Annex D)
- Continuation of FAO training activities (Recommendation GFCM/XIV/78/1, paragraph 26)

Fishery statistics and biological sampling

- Willingness of EEC to continue its collaboration with GFCM (paragraph 32)
- Possible use by certain countries of UNDP and other funds to improve national statistical systems (paragraph 33)
- Studies to be made on length frequency distribution of some demersal species (paragraph 34)

Appraisals and surveys, and subregional collaboration

- Intensification of biomass surveys (paragraph 36)
- Preparation and planning of long term survey programmes on the state of stocks (paragraph 37 and Annex E)
- Organization of meetings beetween Italian and Yugoslav (paragraph 42), Algerian, French, Moroccan and Spanish (paragraph 43) and Bulgarian and Turkish (paragraph 44) experts
- Programmes for collaboration in priority survey areas (paragraph 45)

Fisheries management and limitation on effort

- Collection of data on trawl mesh sizes actually used (paragraph 49)
- Need to obtain a licence before the purchase or construction of a new vessel (paragraph 55)
- Preparation of a study on the control of fishing effort (paragraph 56)
- Organization of a Symposium on Management of Biological Ressources in the Coastal Areas of the Mediterranean in conjunction with the Fifteenth Session of GFCM (paragraph 60)
- Preparation by each country of national management plans (paragraph 66)

Utilization of small pelagic species

- Expression of concern about the implications of over-exploitation of pelagic stocks for production of fish meal (paragraph 71) and priority utilization of these stocks for direct human consumption (paragraph 72)
- Collaboration between technological institutes of the region for an increased utilization of pelagic resources for human consumption (paragraph 74)

Fishing technology

- Encouragement of activities in fishing technology (paragraph 81)

Marine pollution

- Possibility of UNEP continuing financial backing to the Joint FAO(GFCM)/UNEP Coordinated Project on Pollution in the Mediterranean (paragraph 88)

Marine aquaculture

- Possibility that FAO continue to support COPRAQ programme (paragraph 92)

Possible establishment of a fishery commission for the Near East

- Recommendation that the mandate of the proposed commission include no reference, as far as the Mediterranean is concerned, to responsibilities which come within the purview of GFCM (paragraph 98)

Chairman and Vice-Chairmen

- Messrs. A. Demetropoulos, S. Alfirević and A.R. Bayoumi were elected Chairman, first Vice-Chairman and second Vice-Chairman, respectively

Date and place of Fifteenth Session

- October 1980 in principle, at Palma de Mallorca

INTRODUCTION

1. Upon the kind invitation of the Government of France, the Fourteenth Session of the General Fisheries Council for the Mediterranean (GFCM) was held in Nantes from 16 to 20 October 1978. It was chaired by Prof. C. Maurin. Delegates from thirteen of the nineteen member countries, from the European Economic Community and observers from four international organizations took part in the discussions. Annex A gives the list of delegates and observers.

2. The Minister of Transport in charge of marine fisheries was represented by Mr. D. Héry, who conveyed the Minister's best wishes for a successful meeting and expressed the hope that GFCM, thanks to recent changes in its statutes, would be able to implement projects for the conservation and rational management of living resources: a particularly arduous task given the artisanal nature of Mediterranean fisheries and the variety of resources covered. Lastly, the representative of the Minister assured the GFCM of France's firm commitment to aid in the search for a balanced solution to the twin problems of biological conservation and the socio-economic demands of the Mediterranean fishing industry.

3. Mr. C. Maurin emphasized the crisis in world fisheries which had expanded spectacularly until the seventies and had then peaked at a production of roughly 73 million tons. He expressed the fear that the fishing industry might be slated for disappearance unless it could be rationally managed and controlled. Aquaculture held out some promise, but fishing would have to meet man's needs for many years to come. The rush in fisheries development which had been a major feature of these last few decades would have to give way before the demands of management, the Chairman of the GFCM emphasized. What was particularly needed to achieve this goal was to evaluate resource potential and not to fish more but to fish better. New species must be looked for, and effective protection provided prior to exploitation. Mr. Maurin felt that the GFCM was amply suited to filling this role in the Mediterranean context. Thanks to its new mandate and the working bodies with which it was endowed or could create, it was in fact in a position to promote scientific research for a better knowledge of the resource, to review stocks, participate in perfecting selective gear, manage and protect resources and, lastly, help to train fishery personnel.

4. Mr. L.I.J. Silva, speaking on behalf of the Director-General of FAO, thanked the Government of France for its invitation to hold the session of GFCM at Nantes. Reviewing the main items on the agenda, he noted the progress achieved since the last session and emphasized the problems which remained to be solved, particularly the statistics issue. He expressed satisfaction with the Council's action to smooth the way for subregional or even bilateral approaches to the appraisal and management of stocks fished by several countries. He mentioned that, in his opinion, the discussions both on improved utilization of small pelagic species for human consumption and on training ought to be extremely useful. Before concluding, Mr. Silva made a special point of thanking Mr. Maurin for his unremitting interest in the activities of GFCM and for his particular contribution since assuming office as Chairman.

5. The agenda (Annex B) was then adopted.

I. CONSULTATION ON TRAINING OF FISHERY PERSONNEL

6. In introducing the subject, the Chairman noted that at its Thirteenth Session the Council had requested the Secretariat to organize a Consultation on Training to be held during the Fourteenth Session. The Council's attention was called to document GFCM/XIV/78/4 "A proposal for the identification of training needs and coordination of programmes". (The list of documents is given in Annex C.)

7. A review of GFCM activities revealed that training and upgrading of fishery personnel at all levels had long been acknowledged by GFCM as a crucial element in the rational development of the Mediterranean and Black Sea fisheries. Individual countries had established a variety of permanent and ad hoc measures to deal with their problems. However, for many countries it was not possible or economically justifiable to develop and maintain training facilities capable of fulfilling all of the individual requirements. Furthermore, in certain specialties, the needs for any one country seldom justified training whereas a critical mass capable of supporting training can be achieved through combined regional activities. For these reasons the Council, on several occasions, had attempted to improve planning and coordination in training through various statements and resolutions which, however, had not always achieved complete results.

8. In addition to the efforts of the Council, there had been a long and fruitful history of cooperation among the Member States which had contributed much towards meeting the needs of individual countries as well as the needs of nations outside the region. In addition to institutional programmes, several training centres and short courses had been organized to meet specific needs: two courses on stock assessment and on gear technology had been offered in France in 1973, 1976 and 1978; a course on fisheries biology had been organized in Tunisia in 1974 and a course on evaluation of fishery resources by acoustic methods was being planned tentatively for 1980.

9. However, it would appear appropriate in view of the wide scope of activities and the various types of needs to establish a more formal, comprehensive and workable system which would give all Member States the opportunity to utilize the training facilities and resources available within the region. Such a system could also provide the Council with useful information concerning training, including training requirements, which could not be met through existing resources and which would require special centres and courses. The system, however, would require the full support and cooperation of all Member States in order to obtain simple, timely, current and up-to-date information to be made available for use by the Member States.

10. The Council noted that the transfer of the results of research and of improvements in technology to practical usage required the Member States to plan and organize training and upgrading courses at all levels on a continuous basis.

11. The discussion that followed was organized into three phases: the first was devoted to a review of ongoing training activities; the second to a discussion of training needs and the third to a review and analysis of the possible ways by which coordination and cooperation in training might be achieved.

12. A full and lively examination of all aspects of training ensued during which a number of delegates called attention to a wide and impressive variety of training institutions and facilities existing in their respective countries which were available for use by other Member States.

13. The delegate of Bulgaria described the different types of fishery training opportunities available in his country which covered all levels of skills and which could be used by Member States. He also noted that the area of aquaculture appeared to be of increasing importance to countries of the Black Sea and that skilled and trained technicians would be required as part of this development and that FAO might be requested to assist in the establishment of a Black Sea Aquaculture Centre which could serve the needs of Member States.

14. The delegate of Morocco described the organization of fishery training facilities in his country and stated that in spite of a number of constraints and the fact that training facilities were hardly sufficient to meet national needs his country was ready to study the possibility of accepting trainees from other Mediterranean countries.

15. The delegate of Spain stated that many national schools and facilities existed covering all levels of training for which there were opportunities for attendance through fellowships the costs of which could be borne either by Spain or by the fellow's country. He expressed his Government's strong support for cooperation and coordination among Member States in the field of training and in the use of Spanish training facilities.

16. The delegate of Tunisia also described the three levels of training available in his country which could accept trainees from other countries.

17. The delegate of Yugoslavia called the Council's attention to the International Centre for the Training of Fishery Personnel from Developing Countries and distributed to delegations the programme of the Centre. The Centre is located at Split and covers a broad spectrum of subjects for future fishermen, skippers and fishery spervisors and is available for use by participants from GFCM Member States as well as participants from developing countries from other areas.

18. The first phase of the discussion demonstrated the wide scope of training opportunities which existed in the region which could be utilized by Member States as part of a coordinated scheme. However, a number of problems would have to be overcome in order for the coordination to become effective. For example, obstacles such as language, lack of instructors, manuals, texts and training materials had restricted the usage of existing institutions. In particular, it was noted that much of the training offered throughout the region was available in languages in which medium-level fishery specialists from Arabic-speaking countries had limited competence. The GFCM would have to consider these problems as part of coordination in training. It was further suggested that it might be necessary to clarify needs more precisely and to establish priorities in the area of training, in order to facilitate coordination and planning. The need to harmonize training activities with fishery development policies in order to assure a flow of trainees appropriate to national needs was also stressed.

19. During the second phase of the discussions, the Council turned its attention to an examination of the training requirements as expressed by the various delegates. A wide range of needs covering all levels and types of skills emerged from their statements.

20. Finally, the Council explored methods by which training requirements could be collected, analyzed and used for planning and organizing training programmes. Some delegates proposed that the Secretariat should publish a directory of training facilities as well as compilation of training requirements. Because of the importance and specialized nature of the problem, it was suggested that the Council should appoint an ad hoc working party to further examine the matter and to report its findings to the Council for approval.

21. The ad hoc working party consisting of representatives from Egypt, France, Italy, Morocco, Tunisia, Yugoslavia and the EEC met on 16 and 17 October. The working party conducted a detailed review of the issues which had been discussed and considered by the Council during the consultation, and made a careful examination of the proposals contained in document GFCM/XIV/78/4 and in its Appendix A. It decided that a system for the coordination of training among Member States would be in the best interests of GFCM since it would enable countries to utilize all of the appropriate training facilities available within the region as well as providing the Council with information necessary for deciding upon special activities. Therefore the working party agreed to recommend the system proposed in document GFCM/XIV/78/4 — amended as shown in paragraph 22 below — including the revised Guidelines (see Annex D).

22. The Secretariat should accordingly prepare a Directory of Training Facilities and Needs for the Mediterranean Area which should consist of three parts:

(a) Permanent type of training: institutes, schools, ships, etc.

This section would be updated every six years since few changes were expected to occur.

(b) Non permanent training activities: specialized courses, seminars, workshops, study tours, etc.

This section would be updated every two years since it would deal with temporary activities intended to meet a specific, limited need.

(c) Training requirements of the Member States.

This section would be updated every two years since such needs would change.

23. The Directory should be organized along subject lines rather than by country and must be comprehensive and kept up-to-date as specified above under (a), (b) and (c) on the basis of information supplied by each Member State within the above time requirements.

24. The Secretariat would collect the information required to prepare the Directory from each Member Nation through the use of the guidelines given in Annex D.

25. The working party recommended the establishment of a group made up of a few selected representatives to assist the Secretariat in the initial review and analysis of the information collected for use in preparing the first Directory. The group could also assist in seeking ways to relate training to management policy, to establish priorities for training and to facilitate arrangements for training including locating and obtaining teachers and training materials.

26. The Council endorsed the report of its working party and adopted the following Resolution:

RESOLUTION GFCM/XIV/78/1

The Fourteenth Session of the General Fisheries Council for the Mediterranean,

taking into account the need for competent and trained personnel at all levels in order to assure the continued development of the fisheries

noting that most countries in the Mediterranean area are concerned with this matter on a continuing basis

being aware of the fact that many countries have training requirements which exceed national capabilities

decides to establish a system to facilitate the exchange and use of training resources on a regional basis by publishing a Directory of Training Facilities and Needs for the Mediterranean Area.

The Directory will consist of three parts:

- a list of permanent institutions and facilities to be updated every six years
- a list or temporary training centres and courses to be updated every two years

- a list of training requirements to be updated every two years.

Each country will appoint a correspondent who will be responsible for following training developments at the national level and serve as the contact for GFCM.

The Secretariat will obtain data necessary to prepare the Directory by circulating a Guideline to the correspondents.

The Secretariat will be responsible for the publication and distribution of the Directory to all Member States and for facilitating training arrangements.

The Fourteenth Session of the General Fisheries Council for the Mediterranean,

further recognizing that the training activities undertaken by FAO have contributed much to the development of the fisheries

urges that such activities be continued with all possible vigour and support.

II. STATE OF EXPLOITATION OF FISHERY RESOURCES

27. The delegate of Cyprus opened the discussion on this item by presenting the report of the Seventh Session of the Working Party on Resource Appraisal and Fishery Statistics (document GFCM/XIV/78/5), which he had chaired.

28. The conclusions of this meeting are summarized in paragraph 6 of the Report of the Second Session of the Committee on Resource Management (document GFCM/XIV/78/9) as follows:

(a) Recent data confirm the state of heavy exploitation of demersal resources along the European coasts;

(b) a large number of member countries have already taken the GFCM recommendation on mesh size limitation into consideration in their national legislation or are about to do so; but more substantial progress has yet to be made in its enforcement in most countries;

(c) several countries realize the need to limit the fishing effort of their fleets, especially of trawlers; GFCM provides the framework for exchanging information and collaborating in working out formulas in line with needs;

(d) the Working Party on Resource Appraisal and Fishery Statistics has continued its efforts to improve the collection of fishery statistics and to harmonize measures at national level in this respect;

(e) finally, /the Committee drew attention to/ the need for scientific collaboration among Mediterranean countries (ad hoc working groups for appraisal of shared stocks, extended use of acoustic and trawling surveys, etc.) and the recommendations made by the Working Party on Resource Appraisal and Fishery Statistics on the subject.

Fishery statistics

29. The delegations reported on progress achieved in this field in their respective countries. They were unanimous in stressing the importance attached by their countries to this work which is crucial to the future of Mediterranean fisheries. Several speakers drew attention to the special problems raised by data collection in this region in relation to the scattered nature of its fisheries.

30. In this connection, the Italian delegation reminded the meeting that since landing sites are very scattered in Italy, collection of data through sampling appears to offer a preferable solution to census for it is the only one capable of ensuring full coverage of the activities and catches of all vessels, at the same time reducing the risk of bias in the probable event that the portion not covered would not be comparable to the portion having served for the collection of data. In order to achieve this, Italy planned to undertake a frame survey giving the distribution of the means of production and of other stable parameters of the fishery. The data would form the basis for designing the sampling scheme whereby the sampling effort would be best distributed in relation to variations of the parameters to be assessed. Implementation of this scheme on an experimental basis was planned so that cost effectiveness could be compared with the performance of the system now in use.

31. The Yugoslav delegation reported on the efforts to extend data collection to all parts of the private sector and to gather the information needed to assess adequately the fishing effort and identify the origin of catches.

32. The representative of the EEC summarized the EEC activities in the field of statistics. He emphasized the Community's willingness to maintain its already close collaboration with GFCM so as to avoid duplication of effort.

33. Several delegations stressed the technical and possibly financial assistance which an upgrading of data collection systems in their countries would necessitate. At this juncture the Secretariat reported that, unfortunately, its attempts to identify sources of financing for the post of regional statistician emphatically requested by the Council had so far been unsuccessful. It could, however, assume responsibility for finding consultants familiar with the problems of improving national data collection systems. Concerning financing, countries liable to benefit from international technical assistance should make sure that the improvement of national statistical systems ranked high among the uses for which the United Nations Development Programme (UNDP) and other funds were earmarked by their national authorities.

Biological sampling

34. There were still relatively few regular programmes for biological sampling and these, for practical reasons, referred mainly to pelagic species. It would be extremely useful, however, to have data on length frequency distribution of commercial catches for certain demersal species as well. This would make it possible to carry out evaluations of mesh size, in particular, and to determine whether the 40 mm mesh size (stretched) is the optimum size under present fishery conditions.

Appraisals and surveys

35. Substantial progress in sampling had, however, been achieved in some countries. Spain, for instance, expected to be able soon to apply analytical models and thus achieve a marked improvement in the understanding of the state of stocks.

36. The Council approved the resolution of its Working Party on Resource Appraisal and Fishery Statistics recommending that biomass surveys should be intensified as a supplementary source of information crucial to the appraisal and monitoring of the state of stocks. The delegates reported on national programmes underway. While all available methods (such as eggs and larvae surveys and trawl and acoustic surveys in the Adriatic for instance) were currently being simultaneously utilized, acoustic surveys were by far the most common method at least as fas as pelagic resources were concerned. For this reason, the Council attached great importance to the activities of the Working Party on Acoustic Methods for Fish Detection and Abundance Estimation.

37. With respect to this item, various speakers stressed the need to monitor captures (or the nominal effort) at the same time as the biomass for a proper assessment of the impact of fishing on stocks and catches. Recourse to exploratory surveys in no way lessened the need to upgrade national data collection systems. And since the annual biomass estimates were all the more useful for stock appraisal in that they covered long time series, long-term survey programmes should be envisaged. Considering the high cost of such surveys, careful planning of the programmes was essential.

38. The Working Party on Acoustic Methods for Fish Detection and Abundance Estimation held an informal meeting during the Session. The conclusions of its discussions were verbally reported to the Council. Its report is given in Annex E.

39. The group reviewed the specific problems encountered in fish detection and abundance estimation by acoustic methods, i.e. the estimation of the calibration coefficient and its main components, the identification of echo-traces, the equipment, and the automatic processing of signals. It reviewed the stocks and sectors where the execution of surveys requiring intra-regional collaboration were of priority nature. It detailed the tasks which it should achieve during the coming intersession.

40. It delegated Mr. M. Azzali to follow-up the execution of these tasks. It was agreed in principle that the Working Party would meet in Ancona (Italy) during the last quarter of 1979.

Subregional collaboration

41. Several delegations emphasized the fact that regional or subregional cooperation was frequently basic to the execution of exploratory survey programmes, either in order to have available the essential people or equipment or to be in a position to cover stocks shared by several countries.

42. Various examples of collaboration were cited. The delegate of Yugoslavia reported on preparations underway for the meeting he had been requested to organize in his country early in 1979 under the aegis of GFCM. This meeting, which would be attended by Italian and Yugoslav scientists, had been recommended by the Seventh Session of the Working Party on Resource Appraisal and Fishery Statistics. Its purpose would be to review the state of assessment of Adriatic resources.

43. Acting on a proposal by the Spanish delegation, the Council recommended that a similar meeting should be organized the same year for the purpose of examining the evaluation of resources in the Balearic and Gulf of Lions sub-areas (sub-areas 37.1 and 37.2). The Council expressed its satisfaction with the invitation to hold the meeting at the Balearic Laboratory of the Spanish Institute of Oceanography and suggested it be attended by Algerian, French, Moroccan and Spanish scientists and the GFCM Secretariat. Mr. P. Oliver will be responsible for convening the meeting in liaison with the Secretariat.

44. The delegation of Bulgaria expressed its concern over the state of turbot stock in the Black Sea and reported on Bulgarian action to remedy overfishing. The Council approved the measure already adopted in this respect by the Seventh Session of the Working Party on Resource Appraisal and Fishery Statistics (paragraph 156 of the Report of the session of the Working Party) and instructed the Secretariat to get in touch with the Bulgarian and Turkish authorities very soon so that a meeting to define the present state of the stock and to suggest management measures could be organized. This meeting would be attended by scientists appointed by their governments and the technical secretary of the GFCM Working Party. The state of migratory stocks such as bonito and mackerel could also be examined at this same meeting.

45. Lastly, the Council drew the attention of the member countries to the table in paragraph 155 of the Report of the Seventh Session of the Working Party on Resource Appraisal and Fishery Statistics showing priority survey areas. The Council hoped that member countries would take this into account in drawing up their bilateral programmes of collaboration.

III. MEASURES FOR FISHERY MANAGEMENT

46. The Technical Secretary presented the results of the Second Session of the Committee on Resource Management. These conclusions and recommendations are summarized as follows in paragraph 8 of document GFCM/XIV/78/10 "Problems currently raised by the management of Mediterranean fisheries":

- the effective application of legal measures on the limitation of trawl mesh size, and more generally the strengthening of control services and their programmes (paragraphs 18 and 19 of the report of the session of the Committee)

- explaining to fishermen the advantages of applying such legislation (paragraph 17)

- the preparation by the Secretariat of a draft text laying down rules and procedures for inspecting mesh size used by trawlers operating in international waters (paragraph 23)

- the need to control trawling effort, principally in demersal fishing (paragraphs 24 to 31)

- the preparation by the Secretariat of a scientific study on the need, the various methods, and the appraisal of experiences in limiting trawling effort (paragraph 30)

- the preparation by national governments of plans for managing their principal fisheries, and the inter-change through the GFCM of national plans regarding such stocks (paragraph 33)

- the authorization to build or acquire a new boat only after a fishing licence has been obtained (paragraph 34)

- the organization during the Fifteenth Session of the GFCM of a symposium on the management of fish resources in the coastal strip (paragraphs 35 and 36)

- the strengthening of the part played by local and national consultative committees on fisheries (paragraph 44).

Enforcement of Recommendation I/76/1 on banning mesh sizes under 40 mm (stretched) in trawl fisheries

47. The Council discussed the advisability of this measure. While recognizing that some of the scientific data necessary to justify it was still lacking, it acknowledged that, based on the available information and for practical reasons, the 40 mm (stretched) limit did seem appropriate. As soon as enough supplementary data became available, the advisability of modifying this mesh size should be taken up again. Already the recommendation allowed for specific exemptions, particularly for small size species, with the condition that the validity of such exemptions could be scientifically demonstrated.

48. The Council was pleased to see that, as a whole, the GFCM recommendation had been well reflected in the national legislation of member countries. However, it expressed its serious concern over the poor enforcement of these regulations. Such poor enforcement reflected both the reluctance of certain fishing communities to comply with this new regulation and the lack of an adequate control system. Since these problems would persist, no matter what regulatory measures were contemplated, member countries should take steps

without delay to increase their ability to influence fishing patterns. This implied better informed fishermen, well-trained controllers and the improvement of communications among fishermen, administrators and scientists.

49. In order to monitor progress achieved at the national level and to obtain essential data for stock assessment, the Committee recommended that the Secretariat should:

(a) request member countries to provide to the Secretariat, by means of a questionnaire, data on the mesh sizes actually used in their main trawling fisheries and on how often checks are actually made, and then

(b) make this information available to all member countries.

50. The Council felt that the adoption of a scheme to control mesh size in international waters did not appear timely for the following reasons:

(a) the full application of the recommendation on mesh size depended mainly on progress to be achieved at the national level, whether the fleets were working in areas under national jurisdiction or outside;

(b) considering current trends in the law of the sea, Mediterranean areas not covered by national jurisdiction could be expected to shrink rapidly in the near future.

Limitation of fishing effort

51. The Council took note of the conclusions of the Second Session of the Committee on Resource Management and approved the principles upon which effort limitation should be based. They included, in particular, the need for a global approach so as to prevent uncontrolled shifts of fishing effort from one fishery to another; the need to optimize the distribution of catching capacities over the different species, fishing grounds and even ports; the advisability of long-term planning and the need to ensure quick reaction to unexpected fluctuations in fisheries (paragraph 32 of the Report of the Second Session of the Committee on Resource Management).

52. The Council reiterated that the limitation of fishing effort (currently control of trawling operations along European coasts) was crucial for the future of Mediterranean fisheries because ultimately this was the only measure which could avert overfishing, and also because of certain very real practical and theoretical problems raised by its implementation.

53. It expressed satisfaction with the action taken by France and Spain to control fishing effort directly through the implementation of licence schemes limiting the number of trawlers and setting limits to certain of their characteristics. It recommended that the experience gained by these two countries should be carefully watched. It also noted with satisfaction measures taken in Greece, Italy, Tunisia and Yugoslavia to curtail credit for building new trawlers.

54. It recognized that it was highly desirable for each country to have a system allowing it to control the expansion of fishing capacities before it reached excessive levels for this was the only way to avoid the major socio-economic drawbacks involved in cutting back or reconverting fishing fleets.

55. Noting that most member countries already had licensing systems as part of their legislative machinery — even though up to now they might have served only for registration purposes or for the enforcement of regulations regarding navigation safety —, the Council recommended that:

- each country should make it compulsory to obtain a licence before the purchase or construction of a new vessel;

- the administration should issue licences and the rules they contained in accordance with national management plans, i.e. taking full account of the potential of the resources and the need to bring them to optimum production levels.

56. Recognizing that the formulation and implementation of plans to control the fishing effort raised very serious problems, and aware of the importance of taking both positive and negative past experience into consideration, the Council recommended that:

- the Secretariat should prepare for it a study on objectives giving justifications for the possible means which could be employed indicating the results of past experience in controlling fishing effort

- this study should indicate the results obtained by those Mediterranean countries which had tackled this problem, and that

- it should include a bibliography of the major studies devoted to this topic.

Management of fishery resources in the coastal strip

57. The Council recognized that the management of fishery resources presented special problems in the coastal strip but that there were also interesting possibilities, as the Report of the Second Session of the Committee on Resource Management had shown (see paragraph 35 of the report of the session of the Committee). It approved the recommendation made by the Committee on Resource Management and decided to organize a symposium on this topic to be held in conjunction with the Fifteenth Session of the Council. It delegated an ad hoc working group to define more precisely the scope of this symposium.

58. The ad hoc working group met on 18 October 1978 under the chairmanship of Mr. G. Bombace. It included delegates from Algeria, France, Italy, Spain and Yugoslavia. It reported to the Council on the results of its work.

59. The group suggested the following title and topics for the symposium which might last two days:

Title of Symposium

Symposium on Management of Biological Resources in the Coastal Areas of the Mediterranean

Topics and Sub-Topics

A. Definition of the area

(i) Characteristics and administrative definitions
(ii) Regulations and surveillance

B. Current exploitation of coastal resources: the problems it raises

(i) Nature of the resources
(ii) Description of fishing methods
(iii) Socio-economic aspects
(iv) Constraints to fishing

C. Protection and development of the potential yield of the coastal areas

(i) Control of fishing effort and selectivity of fishing methods
(ii) Underwater structures
(iii) Different types of aquaculture.

60. The Coun il approved these titles and topics. It further requested the Secretariat to get in touch with a suitably qualified person who might help in preparing and running the Symposium, as well as with authors who would prepare reference documents for the approved topics and sub-topics.

Management planning and strengthening of national structures responsible for management

61. The Council recognized that the institutions and machinery responsible for management left much to be desired in a number of Mediterranean countries. This had to do with the specific difficulties raised by fishery management, as well as with certain lags in adjusting institutional arrangements and machinery to problems current in Mediterranean fisheries.

62. The Council expressed satisfaction with the work done by its Committee on Resource Management in this field and approved the conclusions of the Report of the Second Session, particularly those in chapter VII "Setting up of National Structures for Resource Management" and in Annex 5 of this Report.

63. The Council recognized that close coordination among the different sectors of the industry (catching, processing, marketing, and distribution) and among these and their supporting structures (fisheries administration and research) was imperative. It would also be very desirable to shorten as much as possible the successive steps of analysis, drawing up of measures, decision-making and enforcement involved in the process of management. To achieve this, the responsibilities for consultation and decision making should be decentralized as much as possible.

64. For these reasons the Council felt that local, provincial, or central fishery committees — according to the scope of the issues to be dealt with — seemed to be particularly well suited to making a final analysis of the situation, discussing its implications, and reaching decisions for whatever action is needed.

65. Lastly the Council recognized that great importance should be given to the drafting of national management plans. Such plans should help anticipate management problems, convince the various social partners of the merits of the steps proposed, and facilitate consultation among countries exploiting common stocks in order to ensure that their programmes for utilizing the same stocks were compatible (document GFCM/XIV/78/9, paragraph 33).

66. While recognizing that the importance attached by individual countries to these plans would depend on national capacities and other factors, such as the role accorded to planning the economy, the Council recommended that each country should draw up a plan for each of its main fisheries which would:

- take into account the general orientation given to national development
- bring together the principal conclusions on the state and potential of stocks, the situation of the fishing fleet and the social and economic aspects

so as to identify major management issues and devise possible intervention schemes.

IV. INCREASED UTILIZATION OF SMALL PELAGIC SPECIES AND OTHER INCOMPLETELY EXPLOITED RESOURCES FOR HUMAN CONSUMPTION

67. The Technical Secretary introduced the item by commending a detailed perusal of the paper GFCM/XIV/78/12 "The utilisation of small pelagic fish in the GFCM area" which had been prepared by G.J. Grantham, a consultant with the Fish Utilization and Marketing Service of the FAO Fisheries Department. The paper described the present state of utilization of small pelagic species in the Mediterranean and proposed solutions for increasing catches where possible, this increase being dependent on the preparation of better products and the finding of new markets. The problem was that certain marine resources were under-utilized for lack of technology to process them into food acceptable for human consumption. It was considered that the application of technology could result in increased exploitation either by acting to increase consumption of traditional products or to develop new products to widen the existing product range. In the latter case the possibility of increasing exports should not be overlooked.

68. The Technical Secretary outlined recent steps taken by the FAO Fish Utilization and Marketing Service to improve the handling and utilization of small pelagic species on a worldwide basis through a number of Trust Fund projects and cooperative programmes between technological institutes. He expressed the hope that institutes in the GFCM area would establish their own programmes of collaboration which could contribute to other FAO efforts.

69. The Chairman suggested that in discussing this item delegates should concentrate on four main areas:

(i) available resources
(ii) requirements to utilize these resources
(iii) problems of handling and preservation
(iv) means to overcome difficulties.

70. The following salient points were made by delegates. The basic problem was seen as the need to increase pelagic exploitation because demersal catches were approaching a maximum. However, to increase the processing industry required either increased subsidy or increased demand. The present low level of exploitation was seen as a result of lack of market demand and market development rather than lack of catching capacity. The difficulty of changing traditional food habits was also emphasized. There were different views on the demand situation in the various countries; in some places, small pelagics were appreciated and commanded high prices whereas in others they were virtually unsaleable; clearly, the prospect for increased intra-regional trade existed. A number of participants described their current programmes for diversification of small pelagic fish production.

71. Reservations about over exploitation as a result of growth of fish meal production were made. Particular concern was expressed about the long-term implications of the EEC price stabilization schemes (EEC Regulation 100/76) and the consequences of deficiencies of the present monitoring of stocks of some pelagic species of the Black Sea which had been considered by the Working Party on Resource Appraisal and Fishery Statistics (see paragraphs 125 and 115 of the report of the Working Party).

72. In this respect the Council, preoccupied by the shortage of proteins of aquatic origin which were available for human consumption in the Mediterranean region, and wanting to express its concern over the frequently observed collapses of pelagic resources in other regions, which resources could be used directly for human consumption but are primarily exploited for the production of fish meal, strongly recommended that pelagic fish caught in the Mediterranean should be primarily utilized for direct human consumption, and that the development of the pelagic fisheries should include appropriate programmes for stock monitoring and analysis of the data.

73. In discussing possible steps that could be taken jointly by FAO and member countries, a reactivation of the Working Party on the Utilization and Marketing of Fish and Fish Products was suggested However, it was generally felt that it would be preferable to promote closer collaborative links between technological institutes, with the prospect of the results of research being transferred to the countries without institutes, through a GFCM collaborative mechanism.

74. It was recommended that the Secretariat should communicate with institutes in the region to determine their priority programmes on which they would be prepared to collaborate. Institutes having a strong programme in a particular subject field would become focal points for collaboration. They would subsequently elicit interest from other institutes and keep in touch with interested parties. FAO undertook to stimulate the progress of such collaboration by undertaking a coordinating role and ensuring the participation of countries with limited financial resources.

V. FISHING TECHNOLOGY

75. After the introduction of the document GFCM/XIV/78/11 "The role of fishing technology in fisheries management", the Chairman emphasized the importance of fishing technology. Considerable progress had been made recently in developing new catching techniques. These improvements vastly improved catch rates, and consequently the economic return of traditional stocks and made it possible to expand fishing operations over grounds or on species formerly inaccessible using traditional techniques. For this very reason, the spread of such methods could entail harmful consequences if their use was extended in an uncontrolled fashion to already heavily fished species. In the absence of controls the ensuing increase in catch rates and economic return would be only a passing phenomenon and the stock would gradually become more heavily overfished than before. For all these reasons, fishing technology was an important element in fishery management. Moreover, because fishing technology supplied fishermen with information of direct concern to them, it could be an effective contribution to improving communications between fishermen and scientists.

76. Along these lines and in addition to the cases outlined in the above mentioned document, another example was given demonstrating the role of fishing technology as a check on the amount of fishing that a trawler could do. The limitation of the engine power of vessels had been rapidly overtaken by the recent introduction of devices which made possible increased traction power, particularly the variable-pitch propeller and nozzles. Performance could rise by as much as 35 per cent. These improvements were of interest because of their favourable impact on the economic return of fishing operations. Since this must nonetheless be taken into account in regulatory measures to limit fishing effort, it was decided to introduce the notion of limited traction power into the fishing effort limitation scheme.

77. Several delegations stressed the important part played by fishing technology in management and indicated the general orientation of their activities in this field. In Spain particularly, an example concerning a contribution of gear technology to management was mentioned: using a new fishing technique to catch shrimp with pots, it had been possible to achieve catch rates and obtain high quality products allowing profitable fishing on grounds inaccessible to trawling. Moreover, the adoption of this more economical, more selective method by a part of the fleet had led to a reduction of the fishing effort on trawlable grounds already overfished.

78. For certain countries where the resources could sustain an increased fishing effort, priority could be given to an immediate increase of the efficiency of catching methods. Under these conditions, it was essential that the impact of the introduction of innovations on the fishing effort and the catch per effort be carefully monitored so as to be in a position to halt the increase in the exploitation rate at the proper level. Concerning the popularization of new methods, the Council recalled the very important part which could be played by the extension and upgrading of training services.

79. The Council's attention was drawn to the need for member countries to acquire or strengthen their skills in fishing technology. Possible FAO assistance in this field was outlined; it consisted mainly of the distribution of documents on planning, organizing and operating specialized services. The distribution of the documentation could be supplemented where necessary by missions by consultants.

80. More generally, the GFCM recalled the complementary roles in fisheries management of fishing technology and stock evaluation. Furthermore, attention was drawn to the importance of fishing technology when drawing up national fisheries development plans. Fishing technology techniques could be used to develop more selective or more economical gear which would be easier to construct and use. In this way fishing technology — including gear, vessels and operations — could substantially improve the working and living conditions of the fishermen.

81. Participants recommended that activities in the field of fishing technology should be continued and encouraged. More specifically, they expressed the wish that specialists in this field should participate on a regular basis at all levels in the activities of the Council, i.e. the Working Party on Resource Appraisal and Fishery Statistics, the Committee on Resource Management and the plenary sessions of the Council.

VI. MARINE POLLUTION MONITORING AND RESEARCH PROGRAMME

82. In presenting this item, the Secretariat reminded the Council that since October 1975 GFCM had been engaged in coordinating, within the framework of a joint FAO(GFCM)/UNEP (United Nations Environment Programme) project, the execution of the following four pilot projects:

MED II - Baseline studies and monitoring of metals, particularly mercury and cadmium, in marine organisms

MED III - Baseline studies and monitoring of DDT, PCBs and other chlorinated hydrocarbons in marine organisms

MED IV - Research on the effects of pollutants on marine organisms and their populations

MED V - Research on the effects of pollutants on marine communities and ecosystems.

83. These four pilot projects are part of the Mediterranean Pollution Monitoring and Research Programme (MED POL) of the UNEP Mediterranean Action Plan.

84. The Council took note of document GFCM/XIV/78/13 "Joint FAO(GFCM)/UNEP Coordinated Project on Pollution in the Mediterranean — Report Number 3". Like its predecessors in the series, this report summed up progress in the four pilot projects (mid-1978 in the case of Report No. 3). The first part contained detailed information on the situation of: the agreements between GFCM and the laboratories concerned on the execution of the pilot projects; the training and equipment supply programmes (two vital items considering that a basic objective of the joint project is to strengthen capabilities in staff and equipment in the laboratories of the developing countries to enable them to participate fully in the regional effort to study pollution); the inter-calibration exercise for research centres participating in MED II and MED III. The second part of the report contained a summary of contributions received by the Secretariat from research centres participating in the four pilot projects for the period April 1977 - February 1978.

85. Several delegations commented fabourably on progress made in the execution of the pilot projects. Moreover, some of them also contributed additional information on their participation in the programme or on measures taken at the national level to monitor or combat pollution (in particular, setting up monitoring networks).

86. The hope was expressed that Report No. 4 would include, among other things, information on work done by the laboratories which were still, in February 1978, not in a position to supply data on the execution of their programmes of work. Several delegations stressed the importance of the inter-calibration exercise. They thus seconded a pressing recommendation addressed to scientists in Report No. 3 recalling that participation in the inter-calibration exercise was, as stipulated in the agreements on MED II and MED III, compulsory.

87. The Council noted with satisfaction the entry into force of the Convention for the Protection of the Mediterranean Sea against Pollution and its Two Protocols (Barcelona Convention). However, it noted with concern that land-based pollution was the main problem in the Mediterranean and that its effects could have serious consequences for living resources and fisheries. It therefore hoped that negotiation of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources scheduled to complement the Barcelona Convention would conclude favourably and very soon.

88. The Council also noted that the present "pilot project" phase was slated to end in 1979 and that there would be a gradual but considerable cutback in UNEP funding. Several delegations expressed concern that a decision of this sort might have a negative effect on the success of the pilot projects, since many countries were barely beginning to participate

in the joint programme. The Council therefore firmly hoped that UNEP would continue to provide the programme with suitable financial backing until such time as those developing country laboratories designated to participate in the project were in a position to fund out of their own resources the tasks of research and monitoring required under the Mediterranean Action Plan.

VII. REVIEW OF NATIONAL ACTIVITIES REGARDING MARINE AQUACULTURE

89. In introducing this item, the Secretariat reminded the Council that the activities of the Cooperative Programme of Research in Aquaculture (COPRAQ) had been of rather modest dimensions during the past intersessional period. No meeting of the Programme had been held. This slowdown in activities could be partially attributed to a cutback in the means available to the Secretariat. However, a Symposium on Finfish Nutrition and Feed Technology had been organized by the European Inland Fisheries Advisory Commission in Hamburg, Federal Republic of Germany, in June 1978. COPRAQ had stressed the vital importance of this topic for the expansion of aquaculture in the Mediterranean. A COPRAQ meeting was planned during the next intersessional period.

90. The delegations reported on progress made in their respective countries. All member countries attached the greatest importance to the development of technically and economically viable methods. Research was underway on the various stages (induced spawning, artificial feeds, breeding eggs and larvae, fingerling collection, etc.) essential for mastering the full biological cycle of the usual species: seabass, mullet, seabream, penaeid shrimp, etc. Trout culture in sea water was currently being carried out experimentally in France. In Italy, aquaculture already played a noticeable role: the various forms of fish farming (marine, lagoons, fresh-water; intensive and extensive) now produced 72 000 tons/year (90 per cent of this total was still made up of trout and mussels).

91. France and Italy gave useful examples of how to reach commercial production levels by direct collaboration between fish farmers (often fishermen's cooperatives) and the research sector.

92. The Council pointed out that COPRAQ provided a highly useful mechanism for coordinating activities in the field of mariculture, particularly in terms of facilitating the exchange of information and averting the risk of duplicating efforts. It expressed the hope that FAO would continue to give, within the limits of its technical and financial resources, all possible support to this programme.

VIII. PROPOSAL TO ESTABLISH A FISHERY COMMISSION FOR THE NEAR EAST

93. The Twelfth and Thirteenth Sessions of the FAO Regional Conference for the Near East, held in 1974 and 1976 respectively, had adopted recommendations that a fishery commission for the Near East should be established. In the view of the FAO Committee on Fisheries, which had taken up the question in 1977, the proposed commission would deal with both marine and inland fisheries and would be open to FAO member countries serviced by the FAO Regional Office for the Near East; they would include the following members of the GFCM: Cyprus, Egypt, Lebanon, Libya, Morocco, Syria and Tunisia.

94. In August 1977, the Director-General of FAO had consulted the member countries concerned about the establishment of this commission and the ways and means of coordinating its activities with those of GFCM, should the commission be established.

95. Up to now Cyprus and Syria, among the GFCM member countries concerned, had expressed their views on this question. Both were in favour, in principle, of the establishment of a fishery commission for the Near East but, while Syria stated that the proposed commission should have responsibility for both inland and marine fisheries, the opinion of Cyprus was that it should have responsibility over inland fisheries only, at least as far as the Mediterranean fisheries were concerned which were very appropriately covered by GFCM.

96. The Council did not feel that it was so constituted as to take an official stand on the establishment of a fishery commission for the Near East, a decision on this question coming under the purview of the governments concerned. It felt, however, that the possible establishment of this commission could help in solving fishery problems of some countries serviced by the Regional Office for the Near East.

97. The Council clearly expressed its concern over the risk of duplicating efforts which certain functions of the commission as now proposed would entail were they officially confirmed.

98. The GFCM therefore strongly recommended, in order to avert any risk of overlapping between the activities of the proposed fishery commission for the Near East and those of GFCM, that the mandate of this commission should include no reference, as far as the Mediterranean was concerned, to responsibilities which already came within the purview of GFCM as defined under Article III of the intergovernmental Agreement which created the GFCM.

IX. OTHER MATTERS

99. The Council thought it would be necessary for future sessions to set aside a particular period during which technical communications relating to the programme of work of the GFCM might be presented and discussed. However, papers relevant to the programme of work of the specialized working parties should continue to be presented and discussed at the sessions of the working parties.

100. The hope was expressed that meetings of the working parties, and of the Committee on Resource Management and the plenary sessions should be well distributed over time. It was also suggested that, where possible, a sufficient amount of time should be allowed to lapse between the plenary sessions of GFCM and those of the International Commission for the Scientific Exploration of the Mediterranean Sea.

X. ELECTION OF THE CHAIRMAN AND VICE-CHAIRMEN

101. The Council unanimously elected:

Chairman	Mr. A. Demetropoulos
Vice-Chairmen	Mr. S. Alfirević
	Mr. A.R. Bayoumi

102. It also wished to unanimously congratulate Mr. C. Maurin for the efficiency, competence and dynamism he had displayed during his past two mandates as Chairman.

XI. DATE AND PLACE OF THE FIFTEENTH SESSION

103. The delegate of Spain officially invited the GFCM to hold its fifteenth session at Palma de Mallorca. The Council expressed its satisfaction over this invitation and thanked the Spanish delegation. October 1980 was fixed as a tentative date.

XII. APPROVAL OF THE REPORT

104. The Report of the Fourteenth Session of the General Fisheries Council for the Mediterranean was approved on 20 October 1978.

Annex(e) A

LISTE DES DELEGUES ET OBSERVATEURS
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Annex B

AGENDA

1. Opening of the Session
2. Adoption of the Agenda and arrangements for the Session
3. Consultation on training of fishery personnel
4. State of exploitation of fishery resources
   - 4.1 Fishery statistics
   - 4.2 Resource appraisal
5. Measures for fishery management
6. Increased utilization of small pelagic species and other incompletely exploited resources for human consumption
7. Marine pollution monitoring and research programme
8. Review of national activities regarding marine aquaculture
9. Proposal to establish a fishery commission for the Near East
10. Any other matters
11. Election of officers
12. Date and place of the Fifteenth Session
13. Adoption of the Report

Annex C

LIST OF DOCUMENTS

GFCM/XIV/78/1	Provisional Agenda
GFCM/XIV/78/2	Annotated Provisional Agenda
GFCM/XIV/78/3	Provisional Timetable
GFCM/XIV/78/4	A proposal for the identification of training needs and coordination of programmes
GFCM/XIV/78/5	Report of the Seventh Session of the Working Party on Resource Appraisal and Fishery Statistics
GFCM/XIV/78/6	Statistical Bulletin No. 2: Nominal Catches 1966-76
GFCM/XIV/78/7	Mediterranean and Black Sea - Nominal catches by countries and species, 1971-76
GFCM/XIV/78/8	Fish detection and abundance estimation through acoustic methods: GFCM activities in this field
GFCM/XIV/78/9	Report of the Second Session of the Committee on Resource Management
GFCM/XIV/78/10	Problems currently raised by the management of Mediterranean fisheries
GFCM/XIV/78/11	The role of fishing technology in fisheries management
GFCM/XIV/78/12	The utilization of small pelagic fish in the GFCM area
GFCM/XIV/78/13	Joint FAO(GFCM)/UNEP Coordinated Project on Pollution in the Mediterranean - Report number 3
GFCM/XIV/78/14	Report of the Mid-Term Expert Consultation on the Joint FAO(GFCM)/UNEP Coordinated Project on Pollution in the Mediterranean, Dubrovnik 1977
GFCM/XIV/78/15	Proposal to establish a fishery commission for the Near East
GFCM/XIV/78/16	Control of enforcement of conservation measures
GFCM/XIV/78/Inf.1	List of documents
GFCM/XIV/78/Inf.2	Information for participants
GFCM/XIV/78/Inf.3	Provisional list of participants
GFCM/XIV/78/Inf.4	General Fisheries Council for the Mediterranean: Agreement and Rules of Procedure

Annex D

GUIDELINES FOR USE IN COLLECTING INFORMATION ON TRAINING FACILITIES AND TRAINING REQUIREMENTS OF THE MEDITERRANEAN AREA

The GFCM publishes a Directory of Training Facilities and Needs for the Mediterranean Area. The Directory serves to assist Member States fulfill training requirements through the coordinated use of facilities located within the region. The cooperation of each Member State in following these guidelines when submitting information is necessary in order that the Directory be of greatest usefulness. It is essential that information be detailed, complete and uniform and be submitted by the established due date.

The Directory covers the following items:

I. TRAINING FACILITIES

1. Permanent facilities

Identify all the public and private fishery training and education institutions

1.1 For each institution, indicate the following:

- Name and address
- Training equipment and special facilities, e.g. training vessel
- Title, length and content of courses or programmes
- Entrance and language requirements
- Training costs
- Boarding costs
- Facilities for lodging and boarding
- Nomination and admission procedures (especially for trainees from outside the Member State).

1.2 Extension services

- Indicate the organization and scope and nature of fishery extension
- Indicate services and programmes available to provide direct, practical training to participants from various Member States.

2. Non-permanent activities, such as courses, seminars, workshops

Indicate the name, purpose, scope and dates of fishery training activities, planned for a two-year period which might be attended by qualified representatives from the various Member States. For each course, indicate the person to contact for further information.

3. Other training services

In addition to the above lists, indicate any other training assistance which can be made available to other states such as the organization of special courses, teachers, texts, manuals and other materials, etc.

4. Current training arrangements with other Member States

List all existing or planned bilateral training arrangements and provide complete details regarding the training being offered.

II. TRAINING REQUIREMENTS

1. Personnel

Identify all of the immediate (1-3 years) training requirements which must be fulfilled as part of the fishery development plan or activity and for which there are no national facilities or courses. For each sector, list number of trainees requiring training by subject matter, level of training, language capabilities and period of availability for training.

1.1 Production sector

Include skippers, mates, engineers, etc., and indicate the numbers by category as well as the expected standards of proficiency required by national regulations where applicable

1.2 Processing and marketing sector

Include processing, marketing, etc., and complete in the same way as 1.1 above

1.3 Aquaculture (all types)

- Traditional (mollusc culture)
- Other

Include fish farming, technicians, extension agents.

1.4 Management and professional sector

Cover such fields as administration sciences, use of acoustic prospection methods, gear technology, fish technology, statistics, quality control, etc.

2. Other training needs

List any other training requirements (instructors, language facilities, equipment, vessels, on-the-job assistance, etc.).

Annex E

WORKING PARTY ON ACOUSTIC METHODS
FOR FISH DETECTION AND ABUNDANCE ESTIMATION

Report of informal meeting on 18 October 1978

I. INTRODUCTION

1. An informal meeting of the Working Party on Acoustic Methods for Fish Detection and Abundance Estimation was held on the occasion of the Fourteenth Session of the GFCM. The following members participated in this meeting: Messrs. M. Azzali (Italy), A.R. Bayoumi (Egypt), A. Demetropoulos (Cyprus), N. Diner (France), I. Kacić (Yugoslavia), A. Lahlou (Morocco), E. Marchal (France), P. Oliver (Spain) and J.-P. Troadec (FAO), Technical Secretary.

2. The Technical Secretary proposed that the exchange of views focus on the following points:

- technical aspects of the methods (calibration, echo identification, equipment, etc.)
- collaboration among Mediterranean countries
- future activities and organization of the Working Party.

This proposal was accepted. Mr. E. Marchal was appointed rapporteur.

II. TECHNICAL ASPECTS

3. All the participants stressed the importance of calibration and of the methodology used to determine the integration constant (cage method). In order to be able to compare the measurements of this constant, it was indispensable to specify the characteristics and performance of each item of equipment, the reference settings and any eventual corrections (see Appendix). It was also recommended that the size and form of the cage be indicated, although in principle these should not affect the result. It was clear that much remained to be done in this field and the representative of Italy proposed that a session of the Working Party be devoted to it. The attention of participants was drawn to the other methods for estimating the integration constant which countries should endeavour to apply concurrently with the cage method.

Echo analysis, detection identification

4. In spite of its imperfections, for most of the observers trawling remained the least imperfect method of identification. There were different opinions on the merits of direct interpretation of echograms. In the Adriatic, Mr. Azzali had found fairly good specificity in detections considered by season, but in the Bay of Biscay Mr. Diner had not been able to establish any clear relation between the form of the echos and the species. The hydrologic conditions often enabled the extension of certain species to be defined in relation to what was known of their behaviour.

5. Distinction between large groups might also be facilitated by comparison of the values obtained by day and by night on account of the differential daily behaviour.

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5. Distinction between large groups might also be facilitated by comparison of the values obtained by day and by night on account of the differential daily behaviour.

6. All sources of information, such as the indications provided by commercial fisheries, should be utilized.

Equipment

7. All the participants used the same type of basic equipment: sounders and a SIMRAD analogical integrator. Certain countries also added a computer, either connected to the integrator or independent. A mini-computer could also be used instead of the integrator, thus increasing the processing possibilities. This system, employed in particular in the United States, was being worked out at Brest. In the near future the development of microprocessors would undoubtedly make it possible for countries to have at their disposal efficient equipment which took up little space and was reasonably priced.

Strategy and utilization of results

8. The Technical Secretary stressed that the strategy to be applied in biomass assessments was not specific to the acoustic method. In all cases problems of distribution, accessibility, availability, vulnerability, etc., had to be dealt with. These had been examined in detail during the specialized training course held at Casablanca in March 1978. The lectures given at this course would be published during 1979, but provisional copies would be sent to members of the Working Party straight away.

9. The most important point was to establish a good sampling pattern and a precise methodology and to abide by it in order to obtain comparable results from one year to the next. Relative biomass assessments could perfectly well be introduced into a production model if a parameter representing the rate of fishing (e.g. the amount of the catch) was known and if a sufficiently long series of observations was available.

III. COOPERATION

10. The participants hoped that the desire shown by scientists to implement joint programmes would enable the difficulties encountered in their execution to be overcome. The main regions where the execution of such multinational projects would be most useful were the Adriatic, the Black Sea, the Alboran Sea and the South Sicily-Tunisia sector.

1. Another form of collaboration consisted of the aid which countries with equipment and know how could give to those which did not have them at present, in particular through bilateral projects. In this connection, the participants expressed satisfaction with projects now under study.

12. It was particularly recommended that the plans of programmes and cruises be dispatched to the other members of the Working Party as soon as they had been drawn up (in general two years in advance). Exchanges should facilitate the setting up of joint cruises or staff exchanges.

IV. FUTURE ACTIVITIES OF THE WORKING PARTY

13. All the participants expressed satisfaction at the preliminary proposal made by the representative of Italy that a session of the Working Party be held at Ancona, possibly in October 1979. The duration could be one week. The agenda should cover calibration methods and their standardization, and the strategy of surveys and the methods for processing the data might also be studied. Documents on the methodology used in the different laboratories should be prepared and exchanged as quickly as possible.

14. It was also planned to organize a training course during 1980. This would be a more important meeting than that of Ancona, as regards both the subjects and the duration.

15. Finally, on the proposal of the Technical Secretary, the Working Party requested Mr. Azzali, who accepted, to act as convenor of the Working Party for a period of one to two years. In the first phase he will prepare, in collaboration with the Secretariat of the GFCM, a provisional agenda for the Ancona meeting which will be distributed to members of the Working Party for their comments.

Appendice
Appendix

PARAMETRES DEVANT ETRE RELEVES LORS DES MESURES DE LA CONSTANTE DE CALIBRATION

PARAMETERS TO BE NOTED FOR THE DETERMINATION OF THE CALIBRATION CONSTANT

Puissance (dB) à l'émission	Source level
ddp de réponse	Voltage response
Angle solide du faisceau	Equivalent solid angle
Gain du sondeur	Echosounder gain
Longueur d'impulsion	Pulse length
Réglages de l'intégrateur	Integrator settings
Conditions de l'expérience	Experiment conditions
Formes et dimensions de la cage	Shape and dimensions of the cage
Espèce, taille moyenne et densité du poisson	Species, mean size and density of fish

La constante doit être exprimée en tonnes/unité de surface par millimètre de l'écho-intégrateur pour la distance de calibration et le gain de l'intégrateur.

The constant should be expressed in tons/unit area per millimeter integration for calibration distance with references to integrator gain.

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